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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/469,308	12/22/1999	IK PYO HONG	K-150	4822

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EXAMINER

FAHMY, SHERIF R

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/469,308

Applicant(s)

HONG, IK PYO

Examiner

Sherif R. Fahmy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim rejections

1. Claims 1-8 are rejected on the grounds stated in paragraphs 3-10 of the first office action, mailed on September 17, 2002.

Response to Arguments

2. Applicant's arguments filed on Dec. 17, 2002 have been fully considered but they are not persuasive.

3. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Accordingly, in regard to the rejections under 35 U.S.C. 103(a) of claims 1-3, Fillot does *not* need to show limitations already shown in Okubo (all limitations that have been indicated in the rejection, and located in the Okubo reference). Therefore, Fillot does not need to show comparing, at the slave repeater, a detected modulated MODEM signal level with a reference level, obtaining a difference between the levels, and adjusting a gain of an amplifier for the RF signal in the slave repeater by using the obtained difference to calculate the gain adjustment. Fillot only needs to show mixing a modulated MODEM signal with the data signal, and these are the only features that had been relied upon for the obviousness rejection under 35 U.S.C. 103(a)

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching,

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suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Fillot was used to prove knowledge generally available to one of ordinary skill in the art. The specific teaching of Fillot relied upon is that mixing pilot signals (or modulated MODEM signals) with data signals to use in monitoring and adjusting repeaters in an optical transmission system is a technique well known in the art. The passages indicated, which demonstrate this, are col. 3- lines 46-48, col. 7- lines 35-38, col. 7- lines 24-28, and col. 8- lines 7-12 of Fillot. The office had explained that there would have been a suggestion to one having ordinary skill in the art to use the conventional technique, taught in Fillot, of mixing a pilot signal (modulated MODEM signal) with the data signal (RF of Okubo), for the comparison with a reference value, instead of using the data signal of Okubo, (this technique is proven to be conventional in the art, as explained in the background section of the Fillot reference). The suggestion to one having ordinary skill in the art (as explained in the rejection) is that a modulated MODEM signal generated at the master repeater of Okubo is widely known to be more reliable and constant than the data signal of Okubo that is dependent on an RF data signal received at the antenna of Okubo. This is conventional knowledge, since clearly, the signal to be received in the antenna of Okubo depends on the distance of the RF source from the master repeater of Okubo, on the weather conditions, and on the strength of the source transmitter, which factors obviously cannot be controlled by the system of Okubo, as opposed to a pilot signal generated *at* the master repeater, which is conventionally known to be controllable (established by the mere fact that it is generated *within* the system, instead of being received

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from a remote source that is not part of the system and that cannot be controlled). It was then explained in the rejection that comparing the RF data signal with a constant reference value would *not* have yielded a result purely based on the attenuation that occurs along the transmission line, but would have been skewed by external factors such as those mentioned here. Accordingly, one having ordinary skill in the art would have relied on the technique shown in Fillot (which technique is *conventional* in the art of optical repeaters) of using a pilot signal for comparison and gain adjustment instead of Okubo's data signal. Accordingly, contrary to applicant's allegation, a suggestion to combine the teaching of Okubo with this knowledge conventional in the art was presented by the office, and present in the rejection, which suggestion applicant did not address in any of the remarks.

5. Instead, applicant's argument that there is no suggestion to combine the references seems to be based mainly on the allegation that Fillot teaches *away* from local detection and comparison of a pilot signal with a predetermined reference value, since Fillot is directed to a system for remote monitoring of a repeater. Examiner respectfully submits that this is not relevant to the grounds of the rejection made in the first office action, since nowhere in the Fillot reference is there any teaching *away* from mixing a data signal with a pilot signal or a modulated MODEM signal: most techniques discussed in Fillot, whether in the background section, or in the section directed to the Fillot invention rely on pilot signals to evaluate/adjust the performance of the transmission line and the repeaters, and do *not* rely on the data signals (see passages indicated above).

6. Finally, it is noteworthy that the Fillot reference is used for resolving the level of *ordinary skill* pertaining to adjusting the amplifier gain of optical repeaters. The background

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section (for instance, see col. 3- lines 20-31 and lines 46-60) teaches various methods of gain control of a fiberoptic repeating system. The background section of Fillot explains "*the general construction* of a gain regulating circuit of this kind" (col. 3- lines 37-45), based on references cited as art prior to the Fillot invention, hence showing what is conventional knowledge in the art. Fillot goes on to say, "A gain regulating circuit *generally comprises* a bandpass filter which samples a pilot signal at the output of the amplification circuit. The pilot signal is amplified and rectified, then compared with a reference voltage. The level difference arising out of this comparison enables the gain of the amplification circuit to be corrected by acting on a variable equalization network which comprises one or more variable elements. (col. 3- lines 46-60)"

Accordingly, Fillot discloses as *conventional*, a method for a gain control of a fiberoptic repeating system comprising mixing a pilot signal with a data signal, and transmitting the mixed signal; detecting at a repeater a pilot signal from the mixed signal transmitted; comparing, at the repeater, the detected pilot signal level with a reference level and obtaining a difference between the levels; and adjusting the gain of an amplifier for the RF signal in the slave repeater by using the obtained difference to calculate the gain adjustment. This, being conventional, would have been knowledge available to anyone having ordinary skill in the art, and would have been easily applied to the master-slave RF/optical repeater system of Okubo. No amount of innovation of Fillot can outweigh conventional knowledge in the art in the determination of what is considered ordinary skill. Hence, the reference successfully resolves the *ordinary* skill in the art.

Additionally, only *particular* disadvantages are cited in Fillot as overcome by Fillot's innovations. There is no reason to assume that Fillot's innovations overcome all disadvantages of conventional techniques, nor is there any reason to assume that Fillot's innovations do not

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introduce any new disadvantages of their own that would have been known to one having ordinary skill in the art, and accordingly, there is especially no reason to assume that Fillot's suggestion would *necessarily* deter the use of conventional techniques. The office additionally provides the Bonnerot reference, which discusses the said technique as conventional in the art (see for instance col. 1- lines 40-55).

7. Applicant further argues that the Okubo reference does not use the difference obtained by the comparison to calculate the gain adjustment. Applicant argues on the grounds that using pre-stored gain correcting values is not equivalent to calculating. Examiner respectfully disagrees. There is nothing about calculating that would preclude the use of pre-stored values. Additionally, the office submits that Okubo's system does not function as applicant alleges. The system of Okubo calculates (calibrates) the gain control value, according to the difference obtained by comparing a signal with a reference value, and then stores the result for further use of the system (col. 6- lines 42-59, and especially col. 7- lines 12-21).

8. With respect to claims 3 and 7, applicant argues that the repeaters of Fillot do *not* perform a local comparison of the pilot signal with a reference value. It seems that applicant is placing more weight on Fillot's inventive concept than the reference as a whole. The reference must be considered as a whole. Moreover, the office had proposed combining two separate embodiments disclosed in Fillot. Examiner respectfully submits that it is irrelevant if one of the two embodiments embodies Fillot's inventive concept whereas the other does not.

9. With respect to claims 4 and 8, applicant's argument is based on alleged deficiencies of the references discussed with respect to the base claims 1 and 5 respectively. These arguments have been addressed above.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fillot.

Regarding claim 9, Fillot teaches combining a monitoring signal of a predetermined level with an RF signal ("radio" -RF- is one of the types of transmission systems the reference is concerned with –see abstract). (col. 3- lines 46-48)

Transmitting the combined monitoring and RF signals to a slave repeater (col. 3- lines 25-27);

Separating the transmitted monitoring signal from the transmitted RF signal at the slave repeater (col. 3- lines 46-49).

Comparing, at the slave repeater (col. 3- lines 25-27), a level of the transmitted monitoring signal with predetermined level; and

Adjusting a gain applied to the transmitted RF signal by using the comparison to calculate the gain adjustment (col. 3- lines 46-56).

12. Regarding claim 10, the pilot signal of Fillot (col. 3- lines 46-48) is a modulated MODEM signal.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fillot as applied to claim 9 above, and further in view of Okubo. Fillot does not specifically teach that the transmitting step comprises: converting the combined monitoring and RF signals into an optical signal; and transmitting the optical signal to the slave repeater via an optical fiber. However, Fillot does suggest that the techniques discussed in the reference are relevant to transmission over optical fibers (see abstract). Okubo teaches the specific features missing from the Fillot reference (see fig. 1- elements 32 and 5). At the time the present invention was made, it would have been obvious to one having ordinary skill in the art to convert the combined monitoring and RF signals into an optical signal; and to transmit the optical signal to the slave repeater via an optical fiber. One having ordinary skill in the art would have been motivated to do this because the use of optical fibers to transmit any signal (having been converted to an optical signal) over long distances is notorious in the art of digital/electrical/radio communications (see Okubo col. 1- lines 38-53). Transmitting over long distances is desired for instance in an application where radio waves are meant to reach a silent zone (a place that RF signals *do not* reach over the atmosphere) (Okubo col. 1- lines 38-53).

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherif R. Fahmy whose telephone number is 703-305-8088. The examiner can normally be reached on 8:30AM-6:00PM(Mo-Th) 8:30AM-5:00PM(2nd & 4th Fr).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3988 for regular communications and 703-305-3988 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

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SRF

March 6, 2003



JASON CHAN
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